CAG CONSULTANTS

Retrofit system mapping report

INFORMING POSITIVE CHANGE

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Executive Summary

Introduction

This Executive Summary report describes the main learning points generated through a domestic retrofit, co-creation, system mapping exercise undertaken between February and May 2024. The map was primarily generated via a series of co-creation, systems mapping workshops, facilitated by CAG Consultants. Supplementary information was gathered via a series of expert stakeholder interviews.

The map itself can be found here, it provides a detailed coverage of national level activity in England and partial coverage of Wales and Scotland.

Purpose

The work was commissioned by the MCS Foundation to inform the development of 4 Local Authority Retrofit Area (LARA) pilots, and the pilot participants are the primary audience for this report. These pilots are intended to trial new, place-based, approaches to retrofit to enable the delivery of improved outcomes in terms of the number and quality of domestic retrofit installations in the pilot areas.

High level commentary

Whilst noting that some level of domestic energy efficiency work occurs without public support, workshop participants and interviewees reported that the current domestic retrofit system in England and Wales is largely dependent upon central government financial support mechanisms.

A lack of control of retrofit grant schemes and how and where they are spent is a constraint factor for the LARA pilots. In commissioning the mapping work and report, the Foundation's working assumption has been that the pilots will need to identify opportunities to improve the operation of the existing system in their area, rather than attempting fundamental system redesign. For example, by focusing on addressing common scheme constraints (e.g. skills shortages) and the development of integrated solutions platforms based on a combination of national grant schemes with more localised (gap filling) solutions.

Workshop participants noted that whilst significant sums of public money have been invested in retrofit, particularly to support less affluent householders, the level of investment falls far short of what is required to enable decarbonisation of the UK housing stock. However, it was noted that there are multiple challenges associated with spending the available resource and that funding is only part of the solution.

Learning points

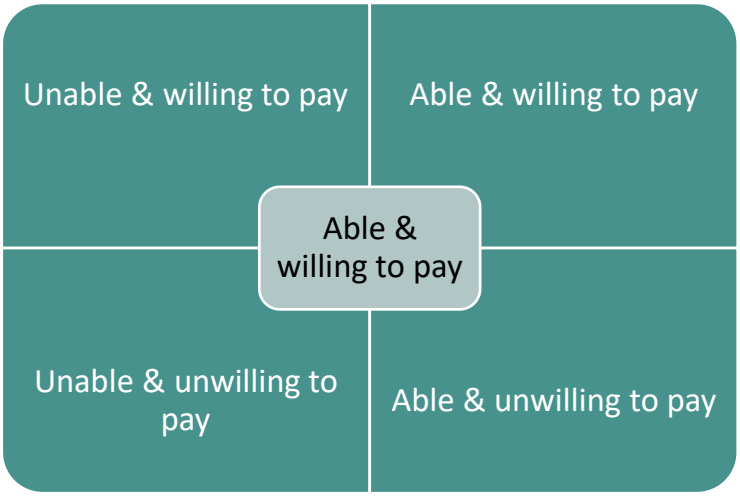
There is considerable expertise within the retrofit sector, this should be recognised and built upon

- The social landlord sector has considerable experience of undertaking large scale housing retrofits and Place-based approaches, such as LARA, should consider how best they might draw on this expertise. Tier 1 contractors, who up to now have specialised in delivering social housing retrofit schemes, may be interested in engaging with broader based area initiatives either to seek alternatives markets or as growth opportunities.
- In addition to learning from others, pilots are encouraged to identify and consider opportunities to import external capacity and expertise consider opportunities through collaboration with other initiatives, for example, national innovation pilots.

Marketing: one size doesn't fit all.

- A mass scale uptake of retrofit by the 'able to pay' market segment will be essential if carbon reduction targets are to be met, but to date this group has proven very difficult to engage. Some organisations have targeted sub-groups within the wider 'able to pay' population, here described as the 'able and willing to pay', but even with this supposedly receptive group, it has proven challenging to translate interest into the installation of measures.
- More positively, understanding of the 'able to pay' population is becoming more nuanced, with new sub-sets being identified and described, and the barriers and drivers for such groups increasingly well understood. This understanding is being used to develop and trial a range of increasingly refined service and product solutions and it is anticipated that LARA pilots will draw upon the current and emerging evidence base to inform any work they may undertake with the 'able to pay' market.
- There is a much larger 'able but unwilling to pay' grouping. The mapping workshops only featured limited discussion of this group as they are not currently engaged with the current retrofit system (and so do not feature in the system map). They are though considered to be a potentially important market for the LARA pilots.
- It was suggested that there is much to be learnt from the commercial marketing sector, but that in simple terms the LARA pilots should be:
    - Clear as to the groups and sub-groups (market segments) that they wish to target.
    - Identify the barriers that their target groups associate with retrofitting and design schemes to remove or reduce them.
    - Identify and promote the benefits that their target groups associate with retrofitting.
    - Communicate with their target markets via their preferred channels, emphasising those benefits of most relevance to the target groups, whilst highlighting how proposed solutions and how they address the target groups barriers.
    - Careful to ensure the quality of delivery to minimise the risk of customer dissatisfaction and 'bad news' stories.

- One interviewee noted that it should not assumed that individuals are fixed in their views. As indicated in the following diagram (supplied by Otley Energy), they suggested that target groups might initially fit into several categories based on their willingness and ability to pay and suggested that the aim of the LARA pilots should be to move them into the 'able and willing to pay' category.



Routes to market

- Tradespeople involved in undertaking unfunded work as part of home improvement projects provide a potential channel of contact for local retrofit initiatives. Raising awareness of local retrofit services and support mechanisms amongst this group could form part of a LARA pilot marketing strategy.

Grant schemes should be targeted to maximise the delivery of wider social outcomes

- Workshop discussions included consideration of the question of how best to target grant enabled retrofit to maximise its social, particularly health, impacts. Whilst HUG2, ECO4 and GBIS all have a focus on alleviating fuel poverty, not all fuel poor households are equally vulnerable and there may be merit in targeting some types of individual or household.
- The Eco/GBIS Flex option provides local authorities with the opportunity to target ECO4 funding and includes an option through which NHS personnel can refer (for support) individuals suffering from certain health conditions
- (although this does not automatically mean they will receive ECO4 support).
- If not already engaging with ECO/GBIS Flex in this way, LARA pilots are encouraged to do so and to consider the potential for targeting of other relevant grants. Workshop participants suggested that there might be scope for using AI to combine local housing and health data to enable this, and that if such methods have not already been established, this might be something for which the LARA pilots might collectively seek innovation funding.
- Workshop participants and interviewees noted that there is a cost associated with finding potential grant beneficiaries and it was suggested that obligated energy

suppliers and managing agents would be likely to be receptive to initiatives that help them to identify potential scheme customers. Given that such bodies are not tied to geographic areas identifying the right contacts for any given LARA pilot area might not be straightforward, but Ofgem and Energy UK convene ECO working groups, and these could provide a route to the relevant contacts.

- LARA pilots should be aware of the possibility that their area may contain a significant number of households whose circumstances mean that they are "unable to pay' for retrofit but are ineligible for government grant support. This group may be locally important and may warrant a bespoke intervention.

The scale of the private rental sector makes it an important target group

- LARA pilots are expected to be local authority led and or to involve local authorities in their partnerships. As such they are, in theory, well placed to focus on increasing the uptake of energy efficiency measures within the private rental sector. Workshop participants suggested that focal areas for any such activity should include:
  - A focus on identifying and improving the worst performing properties in the pilot areas.
  - Sector specific guidance, including signposting to relevant grant support or other forms of financial enabling mechanism.
  - Workshop participants suggested that a combined 'carrot and stick' approach would be likely to be most effective and identified Cornwall County Council as an example of a local authority taking a pro-active approach to MEES, through a combination of enforcement and signposting to compliance support through a partnership with a local community energy organisation.

The retrofit supply chain is already constrained, enabling the retrofit market to grow will require growth in supply chain capacity and capability

The grant aided schemes ECO4, HUG, GBIS and SHDF are understood to have a common supply chain, with installers reportedly moving between schemes in pursuit of the most advantageous rates and least onerous administrative burdens. This approach is enabled by a lack of capacity in the retrofit installer supply chain.

Supply chains need to be confident that growth opportunities are sustainable

- Uncertainty about the likely future growth prospects of the retrofit market may constrain installer engagement. Businesses (and potential trainees) may be more receptive to engaging with supply chain development initiatives if they are seen as developing well rounded professionals, competent in retrofit skills, rather than retrofit specialists.
- Any interventions aimed at growing market demand need to be undertaken in tandem with the development of a high-quality supply chain. Ensuring a positive customer experience is likely to be essential to ensure trust and long-term growth in the retrofit market.

Creating opportunities for training and skills development

- Workshop participants suggested that there may be opportunities for the LARA pilots to improve the co-ordination of training provision with potential participants and employers in their area. For example, through:
  - Improving awareness of training provision and apprenticeship opportunities amongst those involved in existing supply chains.
  - Identifying local skills needs and ensuring matching of supply (trainees and apprenticeships) and demand.
  - The introduction of social value clauses requiring installers to take on local trainees or new apprentices.
  - Working with registered social landlords (RSLs) to link Direct Labour Organisations (DLOs) currently undertaking repairs and maintenance to retrofit training.
  - Raising awareness and expertise amongst local professionals – surveyors and architects that work with able to pay at critical trigger point (moving house, extensions).
- It is anticipated that there will be existing linkages between at least some training providers, employment agencies and retrofit installers. This may include collaborations with national bodies. Existing activity will be looked for during the pilot area assessments but should be checked for during the pilot strategy development workshops.

Supply chain co-ordination to reduce capacity crunches

- Workshop participants discussed whether the scheduling of grant funded work might exacerbate capacity constraints by creating demand peaks, for example following the award of funding. It was suggested that if grant funded work could be staggered, then this might alleviate short term demand constraints, by allowing contractors to spread their workload more evenly. This concept is unproven, but it was considered that it may be worth consideration by the LARA pilots, should supply chain capacity be a significant challenge in their areas.

Measure specific issues

Heat pumps

- Even where supported by grant schemes securing the installation of heat pumps remains challenging. LARA pilots may elect to focus on promoting the uptake of heat pumps and may have an important role to play in addressing perceptual and information barriers, but barriers associated with cost and support scheme design will remain. The MCS Foundation is, though, actively looking to address some of the barriers to heat pump adoption through its policy and advocacy work and there may be opportunities to link this, (and other Foundation work) to that of the pilots. Pilot sites might, for example, provide test beds for the Foundation and its partners to test new policies and practices relating to heat pumps.

Solid wall insulation

- Securing the installation of solid wall insulation was also identified as a challenge owing both to cost and supply chain constraints. LARA pilots may want to consider whether local circumstances indicate a need for intervention. For example:
  - Through new installer training.
  - Enabling the clustering of grant funded installations to secure financial efficiencies.
  - Innovation activity focused on reducing the cost of this measure.

There is a need to integrate retrofit with wider area-based decarbonisation (and adaptation) planning

- Workshop discussions gave limited consideration to non-retrofit initiatives but noted the need for the LARA pilots to take account of other relevant forms of decarbonisation initiatives and planning in their area, including climate adaptation initiatives.
- Workshop participants noted that the Net Zero Hubs were taking an increasingly prominent role in supporting the delivery of retrofit grant funding (including the SHDF) and would be expected to be an important stakeholder for the LARA pilots.

CONTENTS

1 Introduction

1.1. This report describes the main learning points generated through a domestic retrofit, co-creation, system mapping exercise undertaken between February and May 2024. The map itself can be found at here.

1.2. It was initially intended that the resultant map should describe the system for England, Scotland and Wales. In practice, however, the retrofit system in Wales, and particularly in Scotland, was found to be markedly different, and therefore the mapping exercise was largely confined to consideration of activity in England and to a lesser extent, Wales.

1.3. The work was commissioned by the MCS Foundation to inform the development of 4 Local Authority Retrofit Area (LARA) pilots, and the pilot participants are the primary audience for this report.

1.4. The LARA pilots are intended to trial new, place-based, approaches to retrofit to enable the delivery of improved outcomes in terms of the number and quality of domestic retrofit installations in the pilot areas. The map was primarily generated via a series of co-creation, systems mapping workshops, facilitated by CAG Consultants. Supplementary information was gathered via a series of expert stakeholder interviews.

What do we mean by 'retrofit system'?

Definition of a 'system'

1.5. Donella Meadows, one of the earliest advocates of systems thinking defines a system as follows.

"A system is a set of things – people, cells, molecules, or whatever-interconnected in such a way that they produce their own pattern of behaviour over time[1]."

1.6. By retrofit system we mean the set of interconnected policies, activities, people (and their motivations) and resources that interact to trigger and enable (or not) the installation of domestic retrofit measures.

Why take a systems approach?

1.7. The system map has served to inform the Foundations thinking during the development of the LARA pilots, but its main purpose is to serve as a resource for the pilot participants. It is suggested that:

- Systems maps are an effective way of capturing and communicating the complexity of a system. In this case, it was considered important to generate a resource (the map) that illustrated the interactions, and interdependencies, linking the components of the retrofit system.
- The map will provide those involved in the LARA pilot with a shared frame of reference to better enable collective discussion and reflection.

[1] Meadows, D. (2008) Thinking in Systems – A Primer. Available at https://wtf.tw/ref/meadows.pdf

1.8. In addition to describing the system, the mapping exercise captured expert commentators' views on the current systems strengths, weaknesses, opportunities and threats, thereby helping to identify potential focal points for LARA intervention activity.

System boundaries

1.9. Ultimately all 'systems' are interconnected, practically speaking it is therefore necessary to define boundaries for discussion. In this case, it was agreed that the system map would describe the following:

- Drivers of retrofit activity.
- Government interventions (principally financial support mechanisms and other enabling mechanisms).
- Stakeholders.
- Other interventions (in a generalised, aggregated form).
- Outputs and outcomes (including feedback loops).

Exclusions

1.10. Whilst acknowledging its importance in both carbon (embedded) and other sustainability considerations, owing to time and other resource constraints, the mapping exercise excluded consideration of the material supply chain.

Types of retrofit activity considered

1.11. The range of activities considered as 'retrofit' was not (perhaps wrongly) clearly defined. In practice, though, discussions 'naturally' organised themselves around advice (particularly whole house), fabric measures, heat pumps and solar plus battery storage.

Approach

1.12. The structure of the map, and much of the detailed content, was generated through a series of 3 expert workshops involving participants from the:

- MCS Foundation.
- UKGBC.
- National Retrofit Hub.
- Ashden.

1.13. The workshops were run in February and March 2024 and led by CAG Consultants. Each session involved facilitated discussion and the 'live' development of a detailed online system 'master' map using Miro software. Following each workshop the lead CAG facilitator:

- Updated the map to account for discussions held during the workshop; this activity included reference to some external sources, mainly information relating to government support schemes.
- Contacted workshop participants to secure clarifications and expansions on issues they raised during the workshops.

- Conducted interviews with other stakeholders[2] identified by the Foundation and workshop participants as being able to offer expert insight into specific elements of the system. E.g. in relation to government policy, ECO4, fuel poverty, social housing, existing local partnerships[3].

Outputs

1.14. Outputs from the exercise include:

- A detailed map of the current retrofit system.
- A report (this report) describing what are felt to be the key learning points relevant to the LARA pilots, i.e. those that it is felt should be considered during the develop of their local area plans.

Limitations

1.15. Limitations associated with the approach and the associated outputs include:

- As with all exercises of this type, the experience and expertise of workshop participants, and facilitators, dictated the focus and depth of discussion. It is not, therefore, claimed that the map is definitive as some issues are likely to have been overlooked. The supplementary expert interviews were intended to help address this limitation, but it is inevitable that there will be some bias in the final outputs.
- The volume of information associated with the various support schemes, and the rapid turnover and reiteration of schemes and related initiatives, means that even experts find it challenging to keep themselves up to date and workshop participants and interviewees noted the need to factcheck some of their comments. This has been done, but it is possible that some inaccuracies may be present in the map and this report, not least owing to the passage of time since the fieldwork was undertaken.
- Owing to time and resource constraints, only limited use was made of the volume of literature (academic and grey) relating to domestic retrofit. Again, this means that some important issues may not feature in the map.
- The map will rapidly become dated as existing interventions are revised or closed and new ones are introduced by the new government. However, many of the general learning points seem likely to remain valid, at least in the short-medium term.
- Two potentially significant issues raised, but not discussed were:
    - The role of retrofit within wider area-based approaches to decarbonisation such as Local Area Energy Planning. For example, the need to consider the potential role of heat (and cooling) networks when considering plans for expanding the use of household heat pumps in a given area.
    - The need to ensure that housing retrofit activity is co-ordinated and consistent with the need for housing to be adapted for climate change.

[2] DESNZ, Energy UK, National Energy Action, Plymouth Energy Community, Otley Energy.

[3] Interviews were conducted 'in confidence' to encourage interviewees to speak freely, the views expressed were their own as opposed to their organisations official position.

2 High level commentary

Introduction

2.1. There is a lot going on in the domestic retrofit space and it is not considered practical or helpful, from the point of view of potential users, to try to capture the detail of all known activities in the system map. Our approach focused on describing the main forms of national activity. Some components of the system, for example the government support schemes, were described in some detail as conveying an understanding of these was felt to be particularly relevant to the LARA pilots. Other, less mature/substantive forms of activity were captured in a more generalised form. It is anticipated that there may be existing localised retrofit activity in the LARA pilot areas. These are not included in the system map, but as they may be important components of future LARA pilots the MCS Foundation is undertaking an information gathering exercise to identify such activity in each area.

2.2. As noted in the limitations section, workshop discussions gave little consideration to non-retrofit initiatives but noted the need for the LARA pilots to take account of other relevant forms of decarbonisation initiatives and planning in their area. Workshop participants noted that the Net Zero Hubs were taking an increasingly prominent role in supporting the delivery of retrofit grant funding (including the SHDF) and would be likely to be an important stakeholder for the LARA pilots.

Unfunded retrofit activity

2.3. Workshop participants felt it important to acknowledge that there is likely to be a significant volume of incidental (i.e. ad-hoc work not directly associated with retrofit initiatives), unrecorded domestic energy efficiency activity[4], but owing to a lack of insight regarding such activity it was not explored during the workshops and is not recorded in the map.

Government financial support mechanisms are a key driver and enabler of domestic retrofit activity in England and Wales

2.4. Whilst noting that some level of non-funded domestic energy efficiency work occurs, workshop participants and interviewees reported that the current domestic retrofit system in England and Wales is largely dependent upon central government financial support mechanisms. This makes it highly vulnerable to changes in political priorities and schemes are regularly amended, discarded and reinvented.

2.5. Workshop participants noted that whilst significant sums of public money have been invested in retrofit, particularly to support less affluent householders, the level of investment falls far short of what is required to enable decarbonisation of the UK housing

[4] Post the workshops, supporting evidence was found in the form of the English Housing Survey which notes, for example, that circa 12% of households have increased home insulation in the last 5 years whilst 10% have replaced single with double glazing. See https://www.gov.uk/government/statistics/english-housing-survey-2022-to-2023-energy/english-housing-survey-2022-to-2023-energy-report#energy-performance-certificates-and-energy-improvement-work

stock. However, it was noted that there are multiple challenges associated with spending the available resource and that funding is only part of the solution.

2.6. There are currently 5 open national retrofit grant support mechanisms[5]. There is considerable overlap between these interventions in terms of technology, aspiration, supply chain, and target market, but considerable variance in terms of their operational effectiveness. For example, levels of engagement by key stakeholders. In particular, the installer supply chain and householders.

2.7. Scheme design was identified as an important determinant of stakeholder engagement for example, some schemes were associated with high administrative burdens for beneficiaries and/or installers. Another factor affecting uptake appears to be scheme stability. There is a tendency for most schemes to be relatively short lived and subject to constant revision. This means that it is challenging for practitioners in supporting roles – such as local authority staff and fuel poverty advisors - to keep abreast of the detail of support schemes and likely reduces their ability to effectively engage and promote them. It is recognised that some efforts have been made to mitigate this via the establishment of support services such as the Retrofit Information Support and Expertise (RISE) service, but concerns were expressed about the burden that regular scheme changes place on often already over-burdened local authority staff.

2.8. Large scale retrofit schemes have been running for some years now and as a result considerable experience has been accrued, and there has been some growth in the retrofit sector. However, workshop participants suggested that the supply chain is wary of its reliance on government policy, and this constrains investment in training and business growth. In some instances, it was suggested, businesses providing installation services may opt not to grow as they prefer to operate in an environment where demand consistently exceeds supply (rather than expanding to meet supply) as this keeps prices high, whilst ensuring that they are constantly busy. And avoids the risk of changes in policy direction leaving them with surplus staff and wasted investment.

2.9. Central government is responsible for the design of retrofit support schemes, and these are developed as stand-alone one size fits all. Workshop participants expressed support for more bespoke place-based systems, but currently local actors have limited ability to influence scheme design or delivery. Some level of devolution of responsibility for housing retrofit has recently (March 2024) been agreed as part of the 'trailblazer' deeper devolution deals with the Greater Manchester and West Midlands Combined Authorities[6]. This,

[5] By 'open' we mean schemes that are or are expected to be open to new applicants, such as the Boiler Upgrade Scheme, Great Business Insulation Scheme, Social Housing Decarbonisation Fund, ECO4 and the Home Upgrade Grant. Several older schemes, including earlier iterations of those listed, are currently delivering housing retrofit work, but are closed to new applications.

[6] See https://www.gov.uk/government/publications/memorandum-of-understanding-for-the-trailblazer-single-settlements-for-greater-manchester-and-west-midlands-combined-authorities. Viewed on the 27.5.24.

however, is a pilot and the future expansion of such approaches will presumably depend upon a successful evaluation of the initiative.

Learning points for LARA pilots

2.10. Learning points for LARA pilots include:

- A lack of control of retrofit grant schemes and how and where they are spent is a constraint factor for the LARA pilots. In commissioning the mapping work and report, the Foundation's working assumption has been that the pilots will need to identify opportunities to improve the operation of the existing system in their area, rather than attempting fundamental system redesign. For example, by focusing on addressing common scheme constraints (e.g. skills shortages) and the development of integrated solutions platforms based on a combination of national grant schemes with more localised (gap filling) solutions[7].
- Uncertainty about the likely future growth prospects of the retrofit market may constrain installer engagement. Businesses (and potential trainees) may be more receptive to engaging with supply chain development initiatives if they are seen as developing well rounded professionals, competent in retrofit skills, rather than retrofit specialists.
- Retrofit initiatives in the pilot areas should take account of and ideally be integrated with, other area-based household focused decarbonisation initiatives, including climate adaptation initiatives.
- Tradespeople involved in undertaking unfunded work as part of home improvement projects provide a potential channel of contact for local retrofit initiatives. Raising awareness of local retrofit services and support mechanisms amongst this group could form part of a LARA pilot marketing strategy.

[7] For example, the West Yorkshire Combined Authorities 'Better Homes Hub' combines national and locally devised solutions in an integrated programme framework. See https://westyorkshire.moderngov.co.uk/documents/s33725/Item%209%20-%20Better%20Homes%20Hub.pdf

3 Unable to pay

3.1. Most retrofit grant support is aimed at low-income individuals and families. For the purposes of workshop discussions, this group was labelled as 'unable to pay', the assumption being that for this group, paying for the installation of retrofit activity (other than the simplest of measures) is simply unaffordable.

3.2. There are currently 3 main schemes providing support to low-income householders in England, two of these are also available to households in Wales and Scotland. These schemes are:

- Home Upgrade Scheme (HUG, available in England only)
- ECO4
- Great British Insulation Scheme (GBIS)

3.3. Eligibility for these schemes is limited to those on benefits or low incomes households, defined as those whose total income is less than £31,000 per annum. Workshop participants and interviewees noted that, in reality, this cut off point is likely to mean that a significant number of households whose income exceeds this threshold will fall into the 'unable to pay' category, but will be ineligible for government support.

Summary of grant schemes and workshop/interviewee commentary

Home Upgrade Grant (HUG2)

Scheme summary

3.4. HUG2[8] is a UK government grant scheme, but only available in England and then only in a limited number of local authorities, the scheme was preceded by a HUG1 scheme. HUG1 was expected to run until March 2023 with HUG2 running from April 2023 - March 2025.

3.5. HUG2 funding is awarded via a so-called challenge fund. This requires local authorities to enter a competitive bidding process to secure funding for their local area. Workshop participants suggested that this approach to funding distribution would be likely to disadvantage local authorities with less capacity and capability[9].

3.6. HUG is focused on low income, off gas households with 60% of funding ringfenced for rural areas. It is intended to alleviate fuel poverty and to reduce carbon emissions. No income contribution is required from individual homeowners. Priority measures that can be funded via HUG 2 include:

- Insulation.
- Smart heating controls.

[8] For more detailed information see https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/1114867/hug-phase-2-guidance-local-authorities.pdf

[9] This was recognised by DESNZ who looked to mitigate it through the provision of consultancy support. It is unknown to what extent this countermeasure was successful.

- Air source heat pumps (ASHPs).

  HUG 2 can also be used to fund the installation of:

- Solar photo-voltaic (PV).
- Solar thermal
- Biomass
- Double glazing

3.7. HUG2 funding cannot be used as match funding against other government grant schemes but can be blended with LA or third-party finance. As noted elsewhere in this report, both private and social landlords can benefit from HUG 2, subject to sector specific conditions.

Commentary on HUG2 scheme

3.8. HUG2 was reported as having made a 'slow start', although it was noted that this had been true of HUG1 and other preceding schemes. One interviewee suggested that, owing to overlap between grant scheme target groups, house holders in some areas might be approached by several initiatives, and this might be a source of confusion, and subsequent inertia, amongst some potential customer groups.

3.9. Workshop participants offered few comments on HUG2 but observed that householders' views on and receptivity to recommended measures is an important issue as they have the final say as to which measures are installed in their home. The official statistics[10] suggest that solar PV is the most popular measure with low carbon heat measures (understood to be mainly ASHP) making up 24% of installed measures. It is not known to what extent ASHP installation rates are affected by householder preferences, but a lack of familiarity with heat pump technologies was identified by several interviewees as a general barrier to consumer adoption.

3.10. Interviewees with direct experience of HUG2 reported that it was underperforming, in terms of numbers of measures installed, and linked this to poor scheme design. They suggested that there were multiple issues with the design of the scheme and that these had negative implications for participating local authorities, their agents, and installers. They noted that their experience was not unique and that multiple local authorities have had problems with this scheme. These were discussed at an Association of Directors of Environment, Economy, Planning & Transport (ADEPT) working group meeting in November 2023 and led to ADEPT submitting a feedback paper to DESNZ in March 2024[11]. The following quote summaries this groups key concerns.

"the feedback is that HUG2 is very complex, inefficient, poorly structured, and overly prescriptive - it is too narrow in terms of both the eligibility criteria, allowable costs

[10]DESNZ official statistics https://www.gov.uk/government/statistics/green-homes-grant-local-authority-delivery-lad-and-home-upgrade-grant-hug-release-june-2024/summary-of-the-green-homes-grant-local-authority-delivery-lad-and-home-upgrade-grant-hug-statistics-june-2024

[11] Available at https://www.adeptnet.org.uk/documents/feedback-desnz-home-upgrade-2-hug2-grant-programme-submission-adept

and the flexibility allowed in allocating funds. In addition, the way the funding is managed and distributed and the processes for managing the relationships between LAs/ project consortia and DESNZ has been difficult."

Energy Company Obligation scheme (ECO4)

Scheme summary

3.11. The Energy Company Obligation (ECO) is an energy efficiency scheme, targeted at domestic properties across the UK and is intended to reduce fuel poverty and carbon emissions. The scheme is now entering its 4th iteration as ECO4. ECO4 is intended to run from April 2022 – March 2026.

3.12. The scheme is funded through a Home Heating Cost Reduction Obligation (HHCRO) on medium and large energy suppliers. The obligation requires affected suppliers to promote measures that 'improve the ability of low-income, fuel-poor and vulnerable households to heat their homes' (Ofgem[12]). Each supplier is assigned a target for a given number of measures but may trade these with other obligated suppliers.

3.13. Measures that can be installed via this scheme include:

- The repair and replacement of non-renewable heating systems.
- Heat pumps.
- Connection to district heating.
- Heating controls.
- Insulation.
- Solar PV where this is linked to other measures.

3.14. Eligibility for ECO4 requires that potential beneficiaries be in receipt of one or more forms of benefit payment[13]. Social and privately rented properties are eligible for ECO4 support provided the property and tenants meet the scheme eligibility criteria.

ECO4 Flex[14]

3.15. A variant of the scheme, ECO Flex, allows local authorities to refer households not meeting the standard eligibility criteria to ECO4 providers, where they consider that the households are in fuel poverty and vulnerable to the effects of living in an underheated home.

ECO Innovation: New Measures and Products[15]

3.16. ECO4 allows for the installation of innovative measures and products, subject to Ofgem approval. It is understood that this is intended to encourage and enable the introduction of new products into the retrofit market.

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[12] See https://www.ofgem.gov.uk/environmental-and-social-schemes/energy-company-obligation-eco
[13] See https://www.ofgem.gov.uk/environmental-and-social-schemes/energy-company-obligation-eco/energy-company-obligation-eco-homeowners-and-tenants
[14] See https://www.ofgem.gov.uk/publications/great-british-insulation-scheme-and-eco4-local-authority-administration-guidance
[15] For more information see https://www.ofgem.gov.uk/eco4-innovation-new-measures-and-products

Commentary on the ECO4 scheme

3.17. ECO4 is the latest iteration of the longest running of the current retrofit support schemes. The continuity of ECO, was identified as a core strength of the scheme by some interviewee's who noted that it has enabled the development of a well-established network of obligated suppliers, managing agents and installer contractors.

3.18. ECO4 was identified by both workshop participants and some interviewees as having a high administrative cost. It was, though, reported that energy companies saw value in the scheme as it was good for public relations and could reduce the risk of bill non-payment.

3.19. Interviewees involved in the delivery of ECO4 noted that initially levels of interest and uptake had been slow - this was associated with the move towards a more whole house approach - and this had been a source of concern for DESNZ and obligated suppliers. The rate of installations has, though, since increased and it is now anticipated that suppliers will be able to meet their targets. In terms of measures, it was reported that more fossil fuel-based measures were being installed than heat pumps, whilst solid wall insulation is proving to be more expensive than anticipated and installation rates are well below the schemes target.

3.20. Workshop participants highlighted managing agents as a potentially important stakeholder for the LARA pilots. This group contract to deliver given numbers of installed measures on behalf of obligated suppliers and are involved in overseeing the recruitment of potential grant beneficiaries, developing sub-contractor (installer) networks, and managing scheme administration. Managing agents have also become involved in the delivery of other grant schemes including GBIS, HUG and BUS. A workshop participant suggested that they are one of the few entities that really understand the details of how the various grant schemes work.

3.21. Recruitment for ECO4 is understood to be largely sub-contracted out to commercial lead generators and to be conducted by mass mail outs to potentially eligible properties and similar outreach methods. Local authorities, health and third sector/VCS groups are all known to be involved in promoting awareness of ECO (and other grant schemes). Workshop participants reported that some community organisations had looked to act as lead generators, but no successful examples were identified. One reported problem was that community organisations were not paid a commercially viable referral rate. A workshop participant suggested that higher rates could create opportunities for community referral initiatives.

3.22. Multiple local authorities are involved with the ECO Flex scheme, but one interviewee noted that the scheme was not working as anticipated. ECO Flex was intended to encourage local authorities to be more proactive in identifying possible houses for installation. In practice, DESNZ has reportedly found that installers and managing agents are identifying potential beneficiaries to the LAs, who then pass on contact details to the Energy Company. This may be due to a lack of local authority capacity, something that other interviewees identified as a constraint factor.

3.23. ECO4 does not require the lodging of a revised EPC. Workshop participants saw this a major flaw in the schemes design as it means that improvements associated with the scheme are not visible on the register of housing.

Great British Insulation Scheme (GBIS)

Scheme summary

3.24. GBIS, formerly known as ECO+, is a UK wide scheme, funded through an obligation on energy suppliers. As with ECO4, which it is intended to complement, the scheme is mainly focused on the least energy efficient homes and is intended to reduce fuel poverty, whilst also delivering carbon reductions. GBIS is also available to homeowners whose energy performance certificate is D or below although the homeowner may be required to make a financial contribution. Eligible tenants (social and private) can also apply for GBIS, provided they have the permission of their landlord.

3.25. GBIS has a much narrower focus than ECO4 and if mainly intended to lead to the installation of insulation measures. There is a Flex option for GBIS which allows local authorities to refer eligible households for scheme support.

3.26. Multiple interviewees reported that GBIS was failing to deliver against its targets, suggested reasons for this included:

- ECO4 is more profitable for installers. There is a shortage of installers in the market, and they prefer to work on ECO4 funded projects.
- Reported feedback from contractors suggests that they find the administrative burden to be higher than ECO4.
- Only a limited number of the measures supported by this scheme are commercially viable to install at the allowed rates. As well as deterring existing suppliers this also means that there is little incentive for new market entrants.

3.27. GBIS is expected to be revised during 2024.

Learning points for LARA pilots

Targeting grant schemes to maximise the delivery of wider social outcomes

3.28. Workshop discussions included consideration of the question of how best to target grant enabled retrofit to maximise its social, particularly health, impacts. Whilst HUG2, ECO4 and GBIS all have a focus on alleviating fuel poverty, not all fuel poor households are equally vulnerable and there may be merit in targeting some types of individual or household.

3.29. The Eco/GBIS Flex option provides local authorities with the opportunity to target ECO4 funding and includes an option through which NHS personnel can refer (for support) individuals suffering from certain health conditions[16] (although this does not automatically mean they will receive ECO4 support).

[16] GBIS and ECO4 Local Authority Administration Guidance. Available at

3.30. If not already engaging with ECO/GBIS Flex in this way, LARA pilots are encouraged to do so and to consider the potential for targeting of other relevant grants. Workshop participants suggested that there might be scope for using AI to combine local housing and health data to enable this, and that if such methods have not already been established, this might be something for which the LARA pilots might collectively seek innovation funding.

3.31. Workshop participants and interviewees noted that there is a cost associated with finding potential grant beneficiaries and it was suggested that obligated energy suppliers and managing agents would be likely to be receptive to initiatives that help them to identify potential scheme customers. Given that such bodies are not tied to geographic areas identifying the right contacts for any given LARA pilot area might not be straightforward, but Ofgem and Energy UK convene ECO working groups, and these could provide a route to the relevant contacts.

3.32. LARA pilots should be aware of the possibility that their area may contain a significant number of households whose circumstances mean that they are "unable to pay' for retrofit but are ineligible for government grant support. This group may be locally important and may warrant a bespoke intervention.

https://www.ofgem.gov.uk/sites/default/files/2023-07/GBIS%20and%20ECO4%20Guidance%20for%20Local%20Authorities.pdf

4 Social Housing

Introduction

4.1. Workshop participants suggested that the social housing sector was responsible for the majority of current (reported) UK retrofit activity. It was noted that this sector has piloted large scale, area-based, retrofit in the UK and in doing so has accrued considerable learning likely to be of use to those interested in developing place-based approaches to retrofit.

Key Discussion Points

Weak drivers

4.2. Multiple factors were identified as 'drivers' of retrofit activity by registered social landlords (RSLs) but workshop participants did not feel that these alone were sufficient to deliver retrofit activity within the sector, with limited funding, and the need to prioritise critical maintenance, being a key barrier. One key reported weakness is that routine maintenance and refurbishment activity often doesn't incorporate retrofit activity.

Social Housing Decarbonisation Fund (SHDF) is enabling a significant volume of retrofit work, but finding match funding is a limiting factor for some RSLs

4.3. The SHDF was identified as the main enabler of activity within the RSL sector in England although it was noted that, whilst of significant scale, this scheme is only expected to cover a small proportion of the total social housing stock.

4.4. The SHDF is intended to cover 50% of costs[17] and finding match funding was reported as a barrier for some RSLs. Access to finance is in general a barrier for retrofit activity within the social housing sector.

4.5. The social housing sector has established mechanisms for accessing private capital for new house building, and workshop participants reported that some RSLs have examined opportunities to use private finance to fund retrofit, although no confirmed examples were identified[18]. [19]

Use of other grants

4.6. RSLs have limited access to some other government retrofit grant funding streams but cannot use them as match funding for other grant schemes. Specific grant scheme criteria applying to RSLs include:

[17] Interviewees from the RSL sector suggested that, in practice, the SHDF only covers circa 40% of actual costs.

[18] Some examples are reported in https://www.greenfinanceinstitute.com/wp-content/uploads/2022/10/GFI-RETROFITTING-SOCIAL-HOUSING-1.pdf

[19] HACT have created a retrofit credit scheme https://hact.org.uk/retrofit-credits/ as a means of creating a new income stream for social housing retrofits. This is a new scheme but may prove to be a useful supplementary funding source.

- HUG2 funding can be used to upgrade social housing where this is part of a wider area-based approach, but the social housing component is limited to 10% of the overall scheme.
- ECO4 can be used to install measures in social housing with an SAP rating of D-G, where premises are let below the market rate[20].
- GBIS can be accessed by social housing where it has an EPC of E-G.

4.7. RSL supply chain interviewees reported that the sector routinely 'mixes and matches' grant schemes across their housing portfolio.

SHDF failing to enable heat pump installations

4.8. One interviewee noted that only a limited number of properties benefiting from SHDF funded work were reaching the level of energy efficiency required to enable the installation of a heat pump without consumer detriment, i.e. on-gas householders are not being routinely weaned off fossil fuels.

Supply chain largely dependent upon grant funding

4.9. Both workshop participants and interviewees noted that the social housing supply chain was heavily dependent upon grant funding and that experience suggested that the supply chain could rapidly disappear in the absence of such funding.

Tier 1 contractor insight

4.10. Interviews with individuals involved in the RSL supply chain indicated that the social housing sector is served by a limited number of tier 1 suppliers who specialise in this sector. Such suppliers are, reportedly, constrained in their ability and appetite to invest owing to a lack of a clear long-term funding strategy for social housing retrofit.

4.11. As a result of this uncertainty some tier 1 companies were reported as either being involved in or considering retrofit work outside of the social housing sector (some were reported as having delivered HUG projects). However, one Tier 1 interviewee noted their operating model was based on scale (multiple retrofits, ideally co-located) and that for HUG to be attractive they would need to see they portfolios of non-social housing properties being brought to the market. One RSL supply chain interviewee suggested that the compilation of such portfolios is something that the LARA pilots might want to consider.

Supply chain issues and constraints

Reliance on sub-contractors

4.12. Interviewees reported that both RSLs and their Tier 1 contractors were largely reliant on sub-contractors for retrofit delivery. At least some contractors are understood to also undertake work funded via other grant schemes, particularly ECO4.

[20] ECO 4 Delivery Guidance. Available at https://www.ofgem.gov.uk/sites/default/files/2024-04/eco4_delivery_guidance_v2.1.pdf

Skills shortages

4.13. Whilst interviewees reported that there is a general shortage of skills and experience across the whole retrofit supply chain it was suggested that this was experienced differently by different Tier 1 suppliers, with geography and supply chain relationships being important factors in determining whether a particular Tier 1 supplier experienced constraints. It was though noted that should there be a growth in demand, it would be difficult for the supply chain to respond. One interviewee suggested that any market growth needs to be carefully aligned with the growth of a 'quality' supply chain to ensure positive outcomes and to protect the reputation of the retrofit market.

4.14. Interviewees reported that there was a current shortage of expert retrofit assessors and co-ordinators and expressed concern that the entry bar for trainees was too low, meaning that people without suitable prior experience (e.g. in construction) were being trained up and entering the market without the full suite of necessary competencies.

4.15. Interviewees and workshop participants suggested that the social housing installer supply chain was not currently well-equipped to deal with private householders. Soft skills, such as customer engagement, were identified as a particular area of weakness for many in this group.

Importance of ensuring a positive customer experience

4.16. One RSL interviewee emphasised the importance of ensuring quality outcomes to maintain a positive retrofit narrative. In the case of social housing, tenants must agree to retrofitting and so it is important that their experience is positive. A challenge for SHDF funded schemes is the need for work to be undertake within a relatively short time window, and it was reported that it can be difficult to reconcile this with tenant's preferences.

Learning points for LARA pilots

4.17. The RSL sector has considerable experience of undertaking large scale housing retrofits and Place-based approaches, such as LARA, should consider how best they might draw on this expertise. Tier 1 contractors, who up to now have specialised in delivering social housing retrofit schemes, may be interested in engaging with broader based area initiatives either to seek alternatives markets or as growth opportunities.

4.18. There are existing supply chain constraints and uncertainty regarding future funding regimes undermines confidence and reduces their preparedness to invest in business growth. Any interventions aimed at growing market demand need to be undertaken in tandem with the development of a high-quality supply chain. Ensuring a positive customer experience is likely to be essential to ensure trust and long-term growth in the retrofit market.

4.19. Reported difficulties with the cost competitiveness of heat pump installations, in relation to gas, highlight the difficulties that LARA pilots might face where looking to promote the uptake of heat pumps.

5 'Able to and willing to pay'

Introduction

5.1. Workshop participants noted that there is considerable interest in the retrofit sector in stimulating the market for retrofit amongst the so called 'able to pay market'. Many in this grouping are both willing and able to invest in home improvements, but to date, have shown limited inclination to invest significant sums in retrofit measures.

5.2. Research into the able to pay market by the Carbon Co-operative has previously identified that there is a small sub-set who are 'able and willing' to pay some or all, of the costs associated with retrofit services and retrofit measures. More recent work commissioned by Plymouth Energy Community has extended insight into the sub-groups within this population[21], however, for the purposes of this report all such groups are described under the common banner of the 'able and willing to pay'.

5.3. Considerable effort has been invested in developing services and increasingly products, for the able and willing to pay market. So far, workshop participants and interviews agreed that this activity has been largely unsuccessful in terms of market development, but it has generated considerable learning.

Key discussion points

Advice and support (including supply chain engagement)

5.4. Workshop participants reported that able to pay householders wishing to pursue retrofit commonly experienced the following barriers:

- Uncertainty about where best to source initial advice.
- Concerns about the quality, consistency and detail of advice.
- Concerns owing to the unfamiliarity of some of the measures involved, e.g. heat pumps[22].
- A lack of understanding about where best to start.
- Difficulties in accessing bespoke advice.
- A lack of support to enable the move from planning to installation.
- Financial constraints limiting the scale of work they feel able to fund.
- Difficulties in finding installers.

5.5. Informed by their understanding of these barriers several independent, most commonly social purpose, groups have (with financial support from public and charitable institutions) developed and piloted area-based approaches to stimulating domestic retrofit activity amongst an 'able and willing to pay' group of householders (mainly owner-occupiers).

[21] See https://pec-web.files.svdcdn.com/production/files/LEAD/FINAL-LEAD-FSWRCP-Segmentation-Research-Report-090524.pdf?dm=1721384834

[22] NESTA have undertaken considerable work on the issues associated with the installation of domestic heat pumps https://www.nesta.org.uk/sustainable-future/

Some of the learning from these initiatives is in the public domain and would provide a useful resource for LARA pilots new to dealing with this customer type.

5.6. Workshop participants suggested that LARA pilot should, in particular, be aware of the People Powered Retrofit https://retrofit.coop/about and Cosy Homes Oxfordshire https://cosyhomesoxfordshire.org initiatives. These groups were felt to have made the most progress towards developing practical (and self-sustaining) models able to address the advice/support barrier, and therefore to be a good source of ideas and advice for LARA pilots.

Constrained supply chain

5.7. A distinction was drawn between the installer supply chain that provides services for beneficiaries of the main grant schemes, SHDF, ECO4, GBIS and the supply chain that services the 'able and willing to pay' market. The latter were described as often being niche, specialist, suppliers used to working on one-off projects for private households.

5.8. It was noted that the People Powered Retrofit initiative has reportedly found it difficult to access sufficient suppliers to meet the interest and demand that their scheme has generated and, in response, has needed to extend the scope of their work to include supply chain engagement and development.

Access to grants

5.9. Current retrofit grant support is mainly focused on low-income groups. The most notable exception of this is the Boiler Upgrade Scheme (BUS) which provides financial support for heat pump installation.

Cost

5.10. Despite the label of 'willing and able to pay', workshop participants and some expert interviewees noted that cost was still a barrier for many of those in this category. It was suggested that it was not uncommon for householders to agree to a whole house assessment, but to subsequently decide not to proceed with some/any installation measures when faced with actual cost estimates. It was suggested that this can occur even when grants, such as the boiler upgrade scheme, are available.

Innovation

5.11. Multiple initiatives are looking to develop innovative mechanisms to address cost barriers, principally through:

- Enabling access to low-cost finance. For example, the development and roll out of green mortgages (these products are already available from a small number of mortgage providers[23]) and property linked finance a yet untried solution[24]. A range of green home

[23] See Which article https://www.which.co.uk/money/mortgages-and-property/mortgages/types-of-mortgage/green-mortgages-aHAck0T6dCr8 .
[24] See https://www.greenfinanceinstitute.com/programmes/ceeb/property-linked-finance-rising-consumer-demand-for-energy-efficiency-and-financial-innovation/

finance solutions are currently being trialled with the support of the government's Green Home Finance Accelerator[25].

- Reducing the cost of installations, particular heat pump installations. For example, the governments Heat Pump Ready initiative https://www.gov.uk/government/publications/heat-pump-ready-programme/information-about-the-heat-pump-ready-programme

Learning points for LARA pilots

5.12. A mass scale uptake of retrofit by the 'able to pay' market segment will be essential if carbon reduction targets are to be met, but to date this group has proven very difficult to engage. Some organisations have targeted sub-groups within the wider 'able to pay' population, here described as the 'able and willing to pay', but even with this supposedly receptive group, it has proven challenging to translate interest into the installation of measures.

5.13. More positively, understanding of the 'able to pay' population is becoming more nuanced, with new sub-sets being identified and described, and the barriers and drivers for such groups increasingly well understood. This understanding is being used to develop and trial a range of increasingly refined service and product solutions and it is anticipated that LARA pilots will draw upon the current and emerging evidence base to inform any work they may undertake with the 'able to pay' market.

5.14. There is a much larger 'able but unwilling to pay' grouping. The mapping workshops only featured limited discussion of this group as they are not currently engaged with the current retrofit system (and so do not feature in the system map). They are though considered to be a potentially important market for the LARA pilots and as observed by one interviewee, their position should not be regarded as fixed. One aim of retrofit initiatives should be to move currently individuals from the 'able but unwilling to pay' group into the 'able and willing to pay'.

5.15. There is a considerable and growing body of work relating to the design and marketing of retrofit services for the 'able to pay' market. The Foundation is conscious that the volume of information may be problematic for the pilots, and it is anticipated that it, with the support of its partners, will support the pilots to identify the most relevant and useful information resources.

5.16. In addition to learning from others, pilots are encouraged to identify and consider opportunities to import external capacity and expertise through establishing collaborations with other initiatives. For example, national innovation pilots.

[25] See https://www.gov.uk/government/publications/green-home-finance-accelerator-pilot-phase

6 Private Rented Sector

Introduction

6.1. Approximately 20% of the UK population live in privately rented accommodation. This makes private landlords a key target sector if national carbon emission targets are to be achieved.

6.2. Workshop participants identified several drivers and enablers that apply to landlords, but felt that these were weak, having little impact on landlord behaviour. It was also observed that this group was generally difficult to engage with.

6.3. A complicating factor is the variation within the landlord population and in particular the split between large and small landlords, whilst the same drivers might apply, they impact differently on these sub-groups.

Key Discussion Points

Minimum Energy Efficiency Standard

6.4. The Domestic Minimum Energy Efficiency Standard (MEES) Regulations were introduced in 2018 (in England and Wales). They require landlords to ensure that their properties have a minimum EPC level of E before they can be let, or existing tenancies renewed. In practice, workshop participants reported that there has been limited enforcement of MEES and that activity has been geographically patchy, with enforcement agencies facing capacity (lack of officer time) and information challenges.

6.5. It was intended that, MEES would become more stringent over time, increasing to EPC C by 2025, but the last government stepped back from commitment in September 2023. The new government has indicated its support for MEES but have not yet provided any details of their intentions and currently the required minimum standard remains EPC E.

Commercial advantage

6.6. It was suggested that landlords might gain commercial advantage were they able to offer. energy efficient properties, but this was seen as only likely to apply to certain types of property (higher value) and perhaps only where there is a competitive rental market.

Grant aid

6.7. Private landlords can access grant funding through schemes such as HUG2, ECO4 and GBIS, provided that their tenants meet the household eligibility criteria, and subject to the following sector specific conditions:

- HUG 2[26]
  - Is available only to landlords with four or less properties.
  - Landlords must contribute 1/3rd of costs.

[26] Home Upgrade Grant Phase 2 – guidance for local authorities. Available at https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/1114867/hug-phase-2-guidance-local-authorities.pdf

- Cannot be used to ensure a properties compliance with MEES.

- ECO4
  - The tenant must be eligible for ECO support and the and the property have an SAP rating of E, F, G (see guidance [27] for full details).
- GBIS
  - Can be accessed by households in the private rental sector for houses with EPCs D and E.

6.8. A lack of information about grant funding, and advice regarding retrofit were identified as barriers for landlords. It was also suggested that landlords were often unwilling to invest in retrofit, even with grant support.

Learning points for LARA pilots

6.9. LARA pilots are expected to be local authority led and or to involve local authorities in their partnerships. As such they are, in theory, well placed to focus on increasing the uptake of energy efficiency measures within the private rental sector[28]. Workshop participants suggested that focal areas for any such activity should include:

- A focus on identifying and improving the worst performing properties in the pilot areas.
- Sector specific guidance, including signposting to relevant grant support[29] or other forms of financial enabling mechanism.

6.10. Workshop participants suggested that a combined 'carrot and stick' approach would be likely to be most effective and identified Cornwall County Council as an example of a local authority taking a pro-active approach to MEES, through a combination of enforcement and signposting to compliance support through a partnership with a local community energy organisation[30].

[27] Energy Company Obligation Guidance: Delivery. Available at https://www.ofgem.gov.uk/sites/default/files/2024-04/eco4_delivery_guidance_v2.1.pdf
[28] A Toolkit to help local authorities to enforce MEES can be accessed from DESNZ https://www.cse.org.uk/research-consultancy/consultancy-projects/toolkit-to-help-local-authorities-enforce-mees-regulations/
[29] The National Residential Landlords Association has recently introduced a new retrofit training course for landlords https://www.nrla.org.uk/training-academy/safety-and-hazards/retrofit
[30] See https://www.cornwall.gov.uk/housing/private-housing/minimum-energy-efficiency-standards/

7 Crosscutting issues: Training and skills development

7.1. It is widely accepted that supply chain capacity and capability constraints are a key challenge for existing retrofit activity and a limiting factor for future growth. This is acknowledged by government and several initiatives have been launched to address this.

Green Skills Bootcamps

7.2. Skills bootcamps[31] are short courses, up-to 16 weeks, intended to provide participants with a grounding in the skills required to move into work, they do not necessarily lead to a qualification, but may serve as a stepping stone to work and or a more advanced qualification. The Department for Education was identified as the main source of funding for bootcamps, but shared prosperity funding has also, reportedly, been used to fund such programmes in some areas.

7.3. Green skills bootcamp training courses relating to domestic retrofit are available in[32]:

- Retrofit and Domestic Energy Assessor
- Future Homes
- Heat pump installation
- Insulation and Building Treatment
- Retrofit Energy (building energy management and energy efficiency)

Home Decarbonisation Skills Training Competition (Phase 2)[33]

7.4. The home decarbonisation skills training competition has awarded funding to 24 training providers to enable the delivery of domestic retrofit skills training across England. The competition is funded by DESNZ and aims to increase supply chain capacity to enable it to meet the demand created by the SHDF, EC04, GBIS and HUG2. Training providers are required to deliver:

- Skills training in the installation of individual energy efficiency measures supported by government funded retrofit schemes.
- Training in retrofit assessor and retrofit coordinator skills, leading to certification.

Apprenticeships

7.5. Green skills bootcamps can lead on to so-called accelerated apprenticeships. This is a fast-track apprenticeship option for successful green skills trainees. As yet, however, it is understood that there are a limited number of apprenticeships relevant to domestic retrofit. Known options, some of which are still in development, include:

- Retrofit co-ordinator (in development) Level 5.
- Refrigeration, air conditioning and heat pump engineering technician. Level 3.

[31] See https://www.skillsforcareers.education.gov.uk/pages/training-choice/skills-bootcamp
[32] This list should not be considered as comprehensive.
[33] See https://www.gov.uk/government/publications/home-decarbonisation-skills-training-competition-phase-2

- Low carbon heating technician. Level 3.
- Plumbing and domestic heating technician – Environmental Technologies. Level 3.
- Commercial thermal insulation operative.

Shared apprenticeships

7.6. A shared apprenticeship allows employers to reduce the risk and cost to their business by enabling them to offer short term apprentice placements. The apprentice serves a full 3 years but may have placements with multiple businesses. This scheme is currently running across England and Wales[34]

Heat Training Grant

7.7. The heat pump training grant scheme https://wtf.tw/ref/meadows.pdf provides a discount on training (up to £500.00) for heating engineers who wish to train as a heat pump installer.

Workshop participants views on the strengths and weaknesses of identified training support mechanisms

Strengths

7.8. The fact that there is support is a strength, as is the growing list of qualification pathways, available to trainees[35].

7.9. There were mixed views on green skills bootcamps. These were, though, seen as potentially effective where trainees have relevant existing skills, and the training allows them to build on this to expand their competency or where it leads less experienced trainees onto further training.

Weaknesses

7.10. Workshop participants felt that there is a lack of information concerning decision making regarding the deployment of green skills funding and expressed concern that it might not be being distributed strategically, i.e. it is not clear that it is delivering the right type of training to the right area. Other concerns included:

- A lack of suitably skilled and qualified trainers. This was identified as a key constraint for some training providers.
- Uncertain outcomes. Workshop participants suggested that there was insufficient tracking of trainee progress and that it was therefore difficult to determine how effective the programmes were.
- It was reported that training providers were, in at least some cases, struggling to secure enough trainees and were therefore incentivised to allow insufficiently qualified people to attend course. In particular, there was some concern that participants on PAS2035

[34] https://www.citb.co.uk/courses-and-qualifications/citb-apprenticeships/take-on-an-apprentice/types-of-apprenticeships/shared-apprenticeship-scheme/what-is-the-shared-apprenticeship-scheme/

[35] The National Retrofit Hub have compiled a comprehensive list of retrofit qualifications. This can be found at https://nationalretrofithuborguk.sharepoint.com/:x:/g/EbRo1gotE-FGsGPJjfkPAZcBvupmwqkGYiHNYQzer0pUEQ?rtime=jVvI9FOn3Eg

courses might not have sufficient experience in construction to allow them to be effective as retrofit assessors/co-ordinators. This concern was confirmed by interviewees involved in the social housing sector who noted that they preferred to recruit retrofit assessors/coordinators from within.

- Workshop participants noted that smaller suppliers were often reluctant to take up subsidised training as they felt unable to tolerate the loss of income suffered from taking the time off paid work to attend the training.

Learning points for LARA pilots

7.11. Workshop participants suggested that there may be opportunities for the LARA pilots to improve the co-ordination of training provision with potential participants and employers in their area[36]. For example, by:

- Improving awareness of training provision and apprenticeship opportunities amongst those involved in existing supply chains.
- Identifying local skills needs and ensuring matching of supply (trainees and apprenticeships) and demand.
- The introduction of social value clauses requiring installers to take on local trainees or new apprentices.
- Working with RSLs to link Direct Labour Organisations (DLOs) currently undertaking repairs and maintenance to retrofit training.
- Raising awareness and expertise amongst local professionals – surveyors and architects that work with able to pay at critical trigger point (moving house, extensions)

7.12. It is anticipated that there will be existing linkages between at least some training providers, employment agencies and retrofit installers. This may include collaborations with national bodies. Existing activity will be looked for during the pilot area assessments but should be checked for during the pilot strategy development workshops.

[36] The National Retrofit Hub has developed a checklist for those interested in skills development. This can be found at https://nationalretrofithub.org.uk/wp-content/uploads/2024/04/REGIONAL-RETROFIT-SKILLS-TASKFORCE-CHECKLIST.-3.pdf?vgo_ee=flGxDy8P4Zuwbg0wdVbSVD%2Bu2t7Eqmopm2BkpFlabZkjMFg%3D%3AgGh7U76ZPkKW5%2FV%2FnkNyUbo09WSqxPgr

8 Cross cutting issues: Other

Innovation

8.1. Innovation was identified by workshop participants and interviewees as a critical source of solutions to the multiple challenges associated with domestic retrofit. Key themes identified through the workshops and stakeholder interviews include:

- Finance: Development of new financial products and enabling mechanisms to increase mass access to affordable finance. Including place-based solutions, for example, the Local Net Zero Accelerator pilots[37].
- Service design: Retrofit services for the 'able to pay'. Market research and pilot activity focused on the issues of how to move currently 'able but unwilling to pay' householders into the 'willing to pay' group
- Cost reduction (of installation): Heat Pump Ready programme
- New products: ECO4 Innovation (other innovation elements in other grant funded programmes)

Learning points for LARA pilots

8.2. It is suggested that LARA pilots consider:

- How best to ensure that learning from existing innovation pilots is used to inform their work.
- Opportunities for participation in existing or emergent innovation initiatives. For example, several projects funded through the Green Finance Accelerator are piloting consumer engagement and service offers and partnering on these with such pilots may be more cost effective than developing new propositions.
- The potential for developing new innovation projects, focused on addressing area specific or LARA programme wide issues.

Measure specific issues

Heat pumps

8.3. Even where supported by grant schemes securing the installation of heat pumps remains challenging. LARA pilots may elect to focus on promoting the uptake of heat pumps and may have an important role to play in addressing perceptual and information barriers, but barriers associated with cost and support scheme design will remain. The MCS Foundation is, though, actively looking to address some of the barriers to heat pump adoption through its policy and advocacy work and there may be opportunities to link this, (and other Foundation work) to that of the pilots. Pilot sites might, for example, provide test beds for the Foundation and its partners to test new policies and practices relating to heat pumps.

[37] See https://www.gov.uk/government/news/councils-pilot-net-zero-projects-with-19-million-government-backing

Solid wall insulation

8.4. Securing the installation of solid wall insulation was also identified as a challenge owing both to cost and supply chain constraints. LARA pilots may want to consider whether local circumstances indicate a need for intervention. For example:

- Through new installer training.
- Enabling the clustering of grant funded installations to secure financial efficiencies.
- Innovation activity focused on reducing the cost of this measure.

Supply chain constraints

8.5. The grant aided schemes ECO4, HUG, GBIS and SHDF are understood to have a common supply chain, with installers reportedly moving between schemes in pursuit of the most advantageous rates and least onerous administrative burdens. This approach is enabled by a lack of capacity in the retrofit installer supply chain.

8.6. Government training programmes are attempting to increase capacity, but businesses are reportedly reluctant to expand owing to uncertainty regarding the future availability of grants. Developing an 'able to pay' market would be expected to help to build business confidence but currently this is a very small and niche market.

Learning points for LARA pilots

8.7. Workshop participants discussed whether the scheduling of grant funded work might exacerbate capacity constraints by creating demand peaks, for example following the award of funding. It was suggested that if grant funded work could be staggered, then this might alleviate short term demand constraints, by allowing contractors to spread their workload more evenly. This concept is unproven, but it was considered that it may be worth consideration by the LARA pilots, should supply chain capacity be a significant challenge in their areas.

Securing an uptake in domestic retrofit is (in part) a marketing challenge

8.8. Securing and retaining customer buy in is a pre-requisite for all forms of retrofit activity, workshop participants and interviewees noted that there is widespread confusion regarding home retrofit and a general lack of trust.

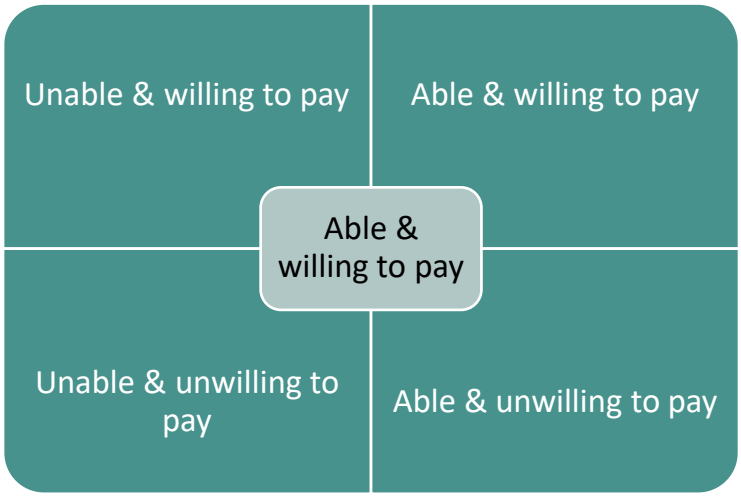
Learning points for LARA pilots

8.9. It was suggested that there is much to be learnt from the commercial marketing sector, but that in simple terms the LARA pilots should be:

- Clear as to the groups and sub-groups (market segments) that they wish to target.
- Identify the barriers that their target groups associate with retrofitting and design schemes to remove or reduce them.
- Identify and promote the benefits that their target groups associate with retrofitting.
- Communicate with their target markets via their preferred channels, emphasising those benefits of most relevance to the target groups, whilst highlighting how proposed solutions and how they address the target groups barriers.

- Careful to ensure the quality of delivery to minimise the risk of customer dissatisfaction and 'bad news' stories.

8.10. One interviewee noted that it should not assumed that individuals are fixed in their views. As indicated in the following diagram (supplied by Otley Energy), they suggested that target groups might initially fit into several categories based on their willingness and ability to pay and suggested that the aim of the LARA pilots should be to move them into the 'able and willing to pay' category.



9 Conclusion

9.1. It is anticipated that the LARA pilots will need to work within the confines of a retrofit system largely designed by central government. The report identifies multiple weaknesses with the existing system, but also some strengths and multiple opportunities for local actors to take action to improve the operation of the system in their area.

9.2. Each pilot will set their own priorities, but the expectation is that each will develop area-based strategies that integrate national programmes and interventions, with locally devised initiatives designed to address identified local needs and provision gaps.

9.3. Suggested issues for the pilots to consider when developing their strategies are shown below.

Learning points

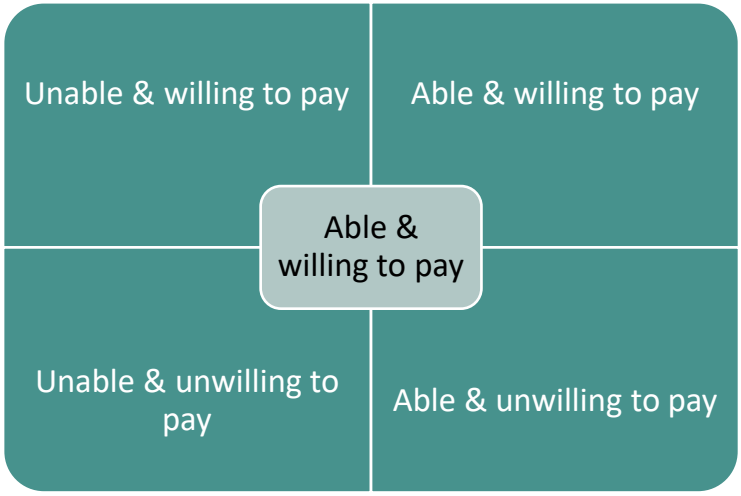
There is considerable expertise within the retrofit sector, this should be recognised and built upon

- The social landlord sector has considerable experience of undertaking large scale housing retrofits and Place-based approaches, such as LARA, should consider how best they might draw on this expertise. Tier 1 contractors, who up to now have specialised in delivering social housing retrofit schemes, may be interested in engaging with broader based area initiatives either to seek alternatives markets or as growth opportunities.
- In addition to learning from others, pilots are encouraged to identify and consider opportunities to import external capacity and expertise consider opportunities through collaboration with other initiatives, for example, national innovation pilots.

Marketing - one size does not fit all.

- A mass scale uptake of retrofit by the 'able to pay' market segment will be essential if carbon reduction targets are to be met, but to date this group has proven very difficult to engage. Some organisations have targeted sub-groups within the wider 'able to pay' population, here described as the 'able and willing to pay', but even with this supposedly receptive group, it has proven challenging to translate interest into the installation of measures.
- More positively, understanding of the 'able to pay' population is becoming more nuanced, with new sub-sets being identified and described, and the barriers and drivers for such groups increasingly well understood. This understanding is being used to develop and trial a range of increasingly refined service and product solutions and it is anticipated that LARA pilots will draw upon the current and emerging evidence base to inform any work they may undertake with the 'able to pay' market.
- There is a much larger 'able but unwilling to pay' grouping. The mapping workshops only featured limited discussion of this group as they are not currently engaged with the current retrofit system (and so do not feature in the system map). They are though considered to be a potentially important market for the LARA pilots.

- It was suggested that there is much to be learnt from the commercial marketing sector, but that in simple terms the LARA pilots should be:
  - Clear as to the groups and sub-groups (market segments) that they wish to target.
  - Identify the barriers that their target groups associate with retrofitting and design schemes to remove or reduce them.
  - Identify and promote the benefits that their target groups associate with retrofitting.
  - Communicate with their target markets via their preferred channels, emphasising those benefits of most relevance to the target groups, whilst highlighting how proposed solutions and how they address the target groups barriers.
  - Careful to ensure the quality of delivery to minimise the risk of customer dissatisfaction and 'bad news' stories.
- One interviewee noted that it should not assumed that individuals are fixed in their views. As indicated in the following diagram (supplied by Otley Energy), they suggested that target groups might initially fit into several categories based on their willingness and ability to pay and suggested that the aim of the LARA pilots should be to move them into the 'able and willing to pay' category.



Routes to market

- Tradespeople involved in undertaking unfunded work as part of home improvement projects provide a potential channel of contact for local retrofit initiatives. Raising awareness of local retrofit services and support mechanisms amongst this group could form part of a LARA pilot marketing strategy.

Grant schemes should be targeted to maximise the delivery of wider social outcomes

- Workshop discussions included consideration of the question of how best to target grant enabled retrofit to maximise its social, particularly health, impacts. Whilst HUG2, ECO4 and GBIS all have a focus on alleviating fuel poverty, not all fuel poor households are equally vulnerable and there may be merit in targeting some types of individual or household.

- The Eco/GBIS Flex option provides local authorities with the opportunity to target ECO4 funding and includes an option through which NHS personnel can refer (for support) individuals suffering from certain health conditions (although this does not automatically mean they will receive ECO4 support).
- If not already engaging with ECO/GBIS Flex in this way, LARA pilots are encouraged to do so and to consider the potential for targeting of other relevant grants. Workshop participants suggested that there might be scope for using AI to combine local housing and health data to enable this, and that if such methods have not already been established, this might be something for which the LARA pilots might collectively seek innovation funding.
- Workshop participants and interviewees noted that there is a cost associated with finding potential grant beneficiaries and it was suggested that obligated energy suppliers and managing agents would be likely to be receptive to initiatives that help them to identify potential scheme customers. Given that such bodies are not tied to geographic areas identifying the right contacts for any given LARA pilot area might not be straightforward, but Ofgem and Energy UK convene ECO working groups, and these could provide a route to the relevant contacts.
- LARA pilots should be aware of the possibility that their area may contain a significant number of households whose circumstances mean that they are "unable to pay' for retrofit but are ineligible for government grant support. This group may be locally important and may warrant a bespoke intervention.

The scale of the private rental sector makes it an important target group

- LARA pilots are expected to be local authority led and or to involve local authorities in their partnerships. As such they are, in theory, well placed to focus on increasing the uptake of energy efficiency measures within the private rental sector.
- Workshop participants suggested that focal areas for any such activity should include:
  - A focus on identifying and improving the worst performing properties in the pilot areas.
  - Sector specific guidance, including signposting to relevant grant support
  - or other forms of financial enabling mechanism.
  - Workshop participants suggested that a combined 'carrot and stick' approach would be likely to be most effective and identified Cornwall County Council as an example of a local authority taking a pro-active approach to MEES, through a combination of enforcement and signposting to compliance support through a partnership with a local community energy organisation.

The retrofit supply chain is already constrained, enabling the retrofit market to grow will require growth in supply chain capacity and capability

The grant aided schemes ECO4, HUG, GBIS and SHDF are understood to have a common supply chain, with installers reportedly moving between schemes in pursuit of the most advantageous rates and least onerous administrative burdens. This approach is enabled by a lack of capacity in the retrofit installer supply chain.

Supply chains need to be confident that growth opportunities are sustainable

- Uncertainty about the likely future growth prospects of the retrofit market may constrain installer engagement. Businesses (and potential trainees) may be more receptive to engaging with supply chain development initiatives if they are seen as developing well rounded professionals, competent in retrofit skills, rather than retrofit specialists.
- Any interventions aimed at growing market demand need to be undertaken in tandem with the development of a high-quality supply chain. Ensuring a positive customer experience is likely to be essential to ensure trust and long-term growth in the retrofit market.

Creating opportunities for training and skills development

- Workshop participants suggested that there may be opportunities for the LARA pilots to improve the co-ordination of training provision with potential participants and employers in their area. For example, through:
  - Improving awareness of training provision and apprenticeship opportunities amongst those involved in existing supply chains.
  - Identifying local skills needs and ensuring matching of supply (trainees and apprenticeships) and demand.
  - The introduction of social value clauses requiring installers to take on local trainees or new apprentices.
  - Working with registered social landlords (RSLs) to link Direct Labour Organisations (DLOs) currently undertaking repairs and maintenance to retrofit training.
  - Raising awareness and expertise amongst local professionals – surveyors and architects that work with able to pay at critical trigger point (moving house, extensions).
- It is anticipated that there will be existing linkages between at least some training providers, employment agencies and retrofit installers. This may include collaborations with national bodies. Existing activity will be looked for during the pilot area assessments but should be checked for during the pilot strategy development workshops.

Supply chain co-ordination to reduce capacity crunches

- Workshop participants discussed whether the scheduling of grant funded work might exacerbate capacity constraints by creating demand peaks, for example following the award of funding. It was suggested that if grant funded work could be staggered, then this might alleviate short term demand constraints, by allowing contractors to spread their workload more evenly. This concept is unproven, but it was considered that it may be worth consideration by the LARA pilots, should supply chain capacity be a significant challenge in their areas.

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Solid wall insulation

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  - Through new installer training.
  - Enabling the clustering of grant funded installations to secure financial efficiencies.
  - Innovation activity focused on reducing the cost of this measure.

There is a need to integrate retrofit with wider area-based decarbonisation (and adaptation) planning

- Workshop discussions gave little consideration to non-retrofit initiatives but noted the need for the LARA pilots to take account of other relevant forms of decarbonisation initiatives and planning in their area, including climate adaptation initiatives.
- Workshop participants noted that the Net Zero Hubs were taking an increasingly prominent role in supporting the delivery of retrofit grant funding (including the SHDF) and would be expected to be an important stakeholder for the LARA pilots.

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